

# GEO TIMES

Successor to the Geological Newsletter

## *A Glossary of Geological Terms*

NUCLEAR GEOLOGY

GEOPHYSICS

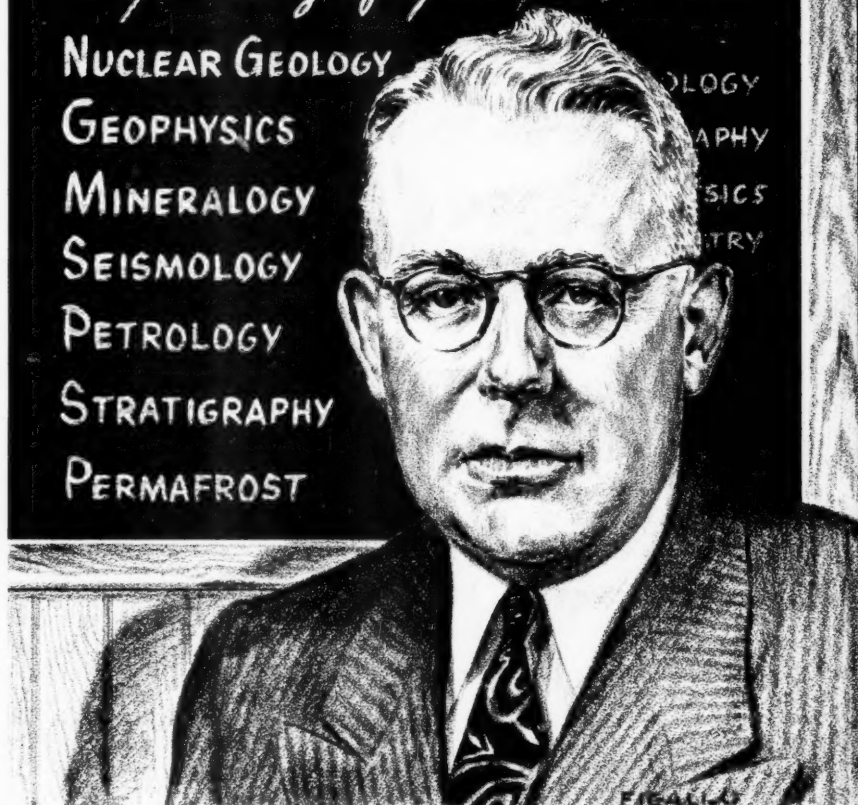
MINERALOGY

SEISMOLOGY

PETROLOGY

STRATIGRAPHY

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**August 1956**

Volume 1, No. 2

Published Monthly by the  
American Geological Institute



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# This Month in GEOTIMES



Successor to the Geological Newsletter

Published by THE AMERICAN GEOLOGICAL INSTITUTE

Robert C. Stephenson,  
EDITOR

Kathryn Lohman  
CIRCULATION MANAGER

Vol. 1, No. 2

August 1956

## AGI Glossary en Route to Printer

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for precision microscopy with polarized light

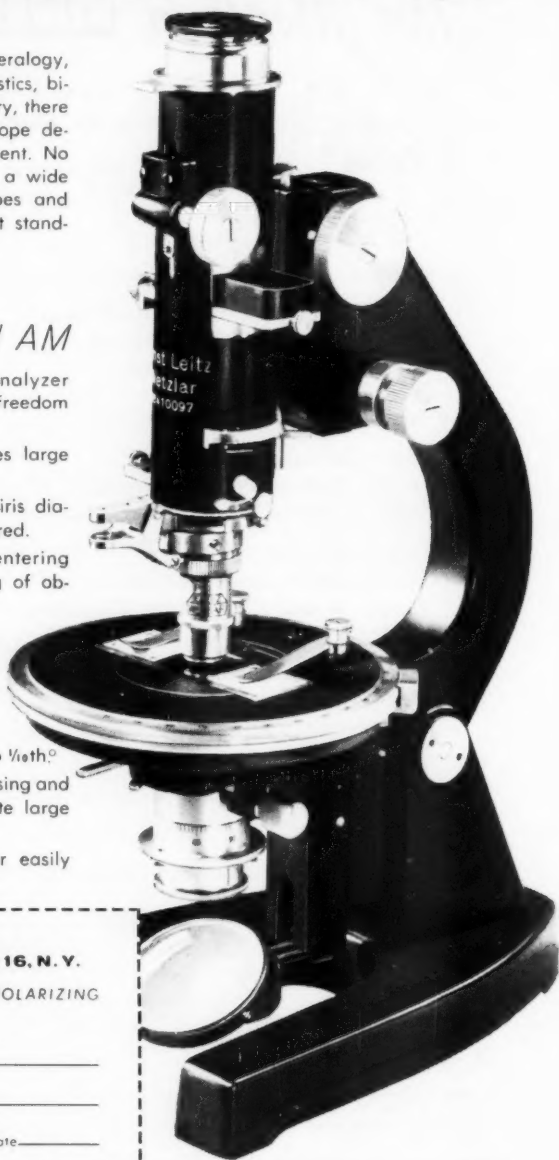
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# Research

Are 7% or 56% of the geoscientists engaged in research? As aptly stated by correspondent W. Dumkopf, *GEO TIMES* vol. 1 no. 1, p 10, research "is a word that means so many different things to different people." Among geoscientists themselves there is a faction that believes the future of geological research is in the laboratory. Obviously laboratory research is needed to implement field research, but the true understanding of geologic phenomena necessitates field observation. Research in geology then must include field observation.

In this age of science and technology, there is a growing dilemma as to where to draw the line between basic and applied (including development) research. Basic research has been defined as directed toward increase of knowledge in science. Much that is done in the pursuit of applied and developmental research contributes materially to the basic knowledge of science. This is particularly true of geological field exploration for petroleum and minerals. None can dispute the contributions to the basic knowledge of stratigraphy and sedimentation that have come in the quest of oil. Are the exploration geologists of a different category than the legion of physicists applying their talents to problems of application and development in the nuclear energy, electronics and guided missiles?

It is likely that there is less difference in the percentage of geoscientists and physicists engaged in applied and developmental research than some statisticians would agree to.

The National Science Foundation has excluded geological exploration from the broad category of research and development in certain of its publications, reportedly on authority of a Harvard Business School definition, sanctioned by the Industrial Research Institute and the National Association of Manufacturers, rather than the geological profession itself. This exclusion appears related to business economics and should not be considered suitable for interdisciplinary comparisons of employment function of geoscientists. The profession would welcome the opportunity to cooperate with the NSF and other interested groups to establish a satisfactory basis of comparison.



## OUR COVER

AGI salutes outstanding geologist, J. V. Howell, upon completion of AGI Glossary. Dr. Howell is a petroleum geologist from Tulsa, Oklahoma, and has long been active in AAPG and GSA affairs.

The AMERICAN GEOLOGICAL INSTITUTE is a non-profit professional service organization established and managed by the scientific societies in the fields of geology and geophysics in cooperation with the National Academy of Sciences-National Research Council. It is the instrument of the profession serving and advancing the welfare of the geoscientist in matters relating to education, professional responsibilities and government relations. It is an active member of the Scientific Manpower Commission. It also functions in the stimulation of public education and awareness of the earth sciences, through career literature, the scouting program and other channels of communication.

*GEO TIMES* is the news magazine of the geological sciences. It reports on current events in the earth sciences, public education and public relations efforts throughout the profession, as well as appropriate legislative and governmental issues. It announces scholarships, fellowships, publications and new developments. It provides a forum for discussion of timely professional problems, and affords a common bond between the many specialized groups within the earth sciences.

# AGI GLOSSARY

## en route to printer

Have you been frustrated by a search for the definition of  
*hornfels*—and its 34 synonyms  
*uncline*  
*metamict*  
*rayliegh wave*—and its 7 aliases  
*gyttja*  
*pericline*—is it a mineral, dome or basin?

Have you wasted many a long hour in the library in search of the definition, only to end up uncertain as to its authenticity? We can bet you have, but be of good cheer for relief is on the way.

The Glossary of Terms Used in Geology and Related Sciences has been transmitted for printing by J. V. Howell, Chairman of the American Geological Institute Coordinating Committee for the Glossary Project, and is expected to be available for distribution before the end of 1956. The Glossary Project was made possible by an implementing grant of the National Science Foundation, supplemented by funds from the Geological Society of America. Printing and distribution are being handled by the GSA as a service to the member societies of the AGI. More than 90 specialists from the various fields of the geological sciences have cooperated in compiling the Glossary.

The Glossary will contain well over 13,000 definitions, indicate current usage, synonymy, and in many cases the original usage of terms. The specialties covered in the new Glossary include the following.

COAL GEOLOGY  
 ENGINEERING GEOLOGY  
 GEOCHEMISTRY  
 GEOMORPHOLOGY  
 GEOPHYSICS  
 GLACIAL GEOLOGY  
 GLACIOLOGY  
 HYDROLOGY  
 INVERTEBRATE PALEONTOLOGY  
 (except *morphologic terms*)  
 MARINE GEOLOGY  
 METEOROLOGY  
 MILITARY GEOLOGY  
 MINERALOGY

NUCLEAR GEOLOGY  
 ORE DEPOSITS  
 PALEOBOTANY  
 PERMAFROST  
 PETROLEUM GEOLOGY  
 PETROLOGY  
 SEDIMENTOLOGY  
 SEISMOLOGY  
 SPELEOLOGY  
 STRATIGRAPHY  
 (except *stratigraphic names*)  
 STRUCTURE  
 SURVEYING & MAPPING

### Glossary Project History

The glossary project was proposed to the A.A.P.G. Research Committee by a group of geologists from Tulsa in 1950. The problem was outlined and

a statement of need was formulated by this committee under F. W. Rolshausen, but it was recommended that the project be referred to the newly organized American Geological Institute. This was done in the Fall of 1950 and

the Board of Directors of the Institute approved both project and the mode of operation.

Each AGI member society was asked to appoint a member of a Steering Committee to act in planning and advisory capacities, and in the recruiting of working subcommittees. J. V. Howell was made chairman of this committee.

A grant of \$7,500 by the National Science Foundation was matched by a GSA loan to be repaid from sales, and the project was started on March 1, 1953 with offices at Tulsa U.

Subcommittees ranging in size from 1 to 5 persons were set up for 30 different phases of each science for compiling and screening definitions. Many existing glossaries were checked. The material was assembled and uniformly typed on key sort cards, punched and collated. The cards were then given a final screening by the Editor, Dr. A. C. Trowbridge, with the assistance and advice of Oil and Gas Journal Presentations Editor, L. M. Nichols. With the editing completed, the more than 13,000 cards have been transmitted to the GSA for reproduction.

The American Geological Institute will serve as a clearing house for additions and corrections to the Glossary. The correspondence received will be referred to a committee for review and revision of future editions.

Compilation of the Glossary was not without its lighter touches. J. V. Howell, when normal methods of prodding failed, resorted to mailing an alarm clock bearing a sticker, "*Tempus Fugit*, the AGI Glossary Project."

### Howell Key Figure

To J. V. Howell, prominent petroleum geologist, the geological scientists owe a tremendous vote of gratitude for his persistent, untiring efforts and personal sacrifices in managing the Glossary Project for the member societies of the AGI. Credit for a job well done should also go to project staff members, Mrs. Littlefield and Mrs. Maebius, and to Editor A. C. Trowbridge. Mr. L. M. Nichols, of the Oil and Gas Journal, aided substantially in an advisory capacity.

It is not possible in this limited space to record the names of each and every one of the more than 90 contributors to the Glossary. The Steering Committee, representing the member societies and working under J. V. Howell is as follows:

### STEERING COMMITTEE

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*Society of Vertebrate Paleontologists*

In the task of selecting the original, oldest, clearest definitions from the thousands in the M. R. Campbell cards, the chairman was ably assisted by Mr. Jack Walper, of Tulsa University. Mr. Mark Pangborn, Jr., of the U.S.G.S., compiled the extensive list of glossaries provided for use of each contributor.

The publication and distribution of the glossary is in the capable hands of the Geological Society of America under Henry Aldrich and Agnes Creagh. The GSA loan to the Glossary Project will be repaid out of sales and such profits as are eventually realized will revert to the AGI.

The price of the Glossary and its release date have not been established. Orders will not be accepted until these have been definitely established.



## MANPOWER *in a column -*

By HOWARD A. MEYERHOFF  
*Scientific Manpower Commission*

Thanks in no small part to three years of persistent plugging by the Engineering and Scientific Manpower Commissions, there is now widespread public concern about the shortage of scientists and engineers. To be sure, we should credit the Russians with an assist, for their institutions of higher learning are turning out technologists so fast that professionals in that country would be a ruble a dozen if the law of supply and demand were allowed to work. Instead, the Ph.D. in science or engineering is a privileged character in the USSR and is alleged to receive the equivalent of \$36,000 a year in salary. Even if the price were knocked down to \$25,000 in the United States, we would have considerable trouble making a substantial increase in the number of highly competent people entering these disciplines.

Every line of evidence leads to the public schools, and particularly to the high schools, as the major cause of our shortage, but actually the blame should be more widely distributed. The Carnegie Corporation of New York recently completed a study of mathematics instruction in the public schools. It was found that most mathematics teachers neither knew the subject nor how to teach it effectively. The curriculum is outmoded and, in general, it was discovered to be the most hated subject, with the dislike being shared by both students and teachers.

We may lift part of the blame off the shoulders of our educators and place it squarely on those of the public. The fact that there are not enough teachers of mathematics and science to go around is a direct consequence of low salaries and unsatisfactory working conditions. Young people are attracted into the teaching profession in spite of, rather than because of, the present situation. In NEA's "Ninth Annual National Teachers Supply and Demand Study," it was found that, in 29 states for which complete figures were available, only 1,168 teachers trained in mathematics could be found to fill 1,919 vacancies. The remaining 751 available positions were assigned to teachers trained in other disciplines—for example, physical education instructors (70), English teachers (57), and music teachers (14). Thus,

## MARSHALL SCIENCE INSTITUTE

A Physical Science Institute was held at Marshall College, Huntington, West Virginia in June of this year with the support of the National Science Foundation. The six-week course for science teachers included geology, astronomy, physics and chemistry according to Professor Raymond E. Jenssen, Head of the Geology Department. Sixty teachers participated in the successful Marshall College Institute.

The AGI supplied career literature to participants in the Institute and suggested that the West Virginia Geological Survey be consulted for data on local geology.

Similar projects are slated for NSF support during the summer of 1957. Information required for the drafting of a proposal may be obtained from Program Director, Education in the Sciences, National Science Foundation, Washington 25, D. C., and all applications must be submitted on or before September 1.

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nearly 40 per cent of the youngsters in these states were learning high school mathematics from teachers with no training in the field.

The 1955 White House Conference on Education spotlighted the problem but did not solve it. The President's recently appointed National Committee for the Development of Scientists and Engineers will, almost of necessity, have to deal with it. Perhaps the new group incorporated in July in the District of Columbia as the Council for Basic Education will deal effectively with the problem, for it is dedicated, among other things, to the principle that "all students, without exception, receive adequate instruction in the basic intellectual disciplines, especially English, mathematics, science, history, and foreign languages."

Earth scientists have virtually abandoned hope of having their subject taught in the high schools. The least they can expect in return for this sacrifice is good instruction in the basic subjects that are so important as backprops to professional training. We have a big stake in this problem. We must assist in solving it.

# **MINERALS MEALS MEN**

## **A formula for looking ahead**

What are the problems of tomorrow for which we should prepare today?

Few companies can detach their top brainpower from problems of the immediate future to look at the problems of 50-100 years hence, and, even if they can, it is advantageous to have views of experts unfettered by company tradition and policy.

Recognizing the need for broad reviews of our total world resources for long-range planning, the California Institute of Technology has embarked on a new concept of industry-education relations by offering as a part of its Industrial Associates Program a series of conferences with 27 major U. S. companies to discuss a forecast of the future. A Cal Tech team has met privately with top management of these companies to discuss the future in three broad areas—"minerals, meals and men." On the Cal Tech team are Geochemist Harrison Brown, Biologist J. F. Bonner, Psychologist J. H. Weir and Robert V. Bartz, Executive Director of the Industrial Associates Program. Westinghouse, du Pont, Hughes Aircraft, Jersey Standard, IBM—to name a few—have met with the team for a look into the 21st century and a discussion of the problems.

### **Energy-Water**

Harrison Brown, in discussing the mineral future, offers the opinion that energy is the key to mankind's eventual answer to problems of mineral re-

sources. Exhaustible sources of energy—coal, oil and gas—must yield to solar and atomic energy. The mineral requirements for a world-wide spread of our own high standard of living for a continually growing population must utilize increasingly lean sources—ultimately ordinary rock, sea-water and air. To supply these raw materials of tomorrow will draw heavily on our energy resources. Water will pose an increasingly important problem.

Despite our present domestic problems of farm production, Dr. Bonner indicates the world to be operating on a food deficit with only a quarter of the total population adequately fed. To face the growing food requirements of mushrooming populations he predicts that increasing amounts of plant proteins will replace animal protein. Dr. Bonner notes that a steak is becoming more difficult to produce than a television set.

### **Manpower and Brainpower**

The third man of this forecasting triangle, Dr. John Weir, deals with manpower—brain power. Solutions to the problem of resources will require a growing concentration of scientific and engineering talent. Dr. Weir indicates that we know very little about creative thinking abilities essential to technical advances. Adequate understanding of how to identify, measure and develop this ability would add tremendously to our manpower productivity. He is of the opinion that scientists and engineers should be freed of administrative work and other non-productive functions. More women should be encouraged to enter technical fields. Dr. Weir concludes that our scientific and engineering brainpower can be adequate to meet all needs if we pump enough energy—money, effort and talent—into the system.

Based on the great interest of Industry in these forecast conferences, Cal Tech is planning to conduct additional similar meetings in September for others among leading U. S. firms.

# GEOLOGY



by  
Bob  
Bates

Last spring, Dickinson College, Carlisle, Pa., gave an adult-education course in uranium prospecting. It met one evening a week for an hour and a half and carried a registration fee of \$20. Enrollment was closed at 47 persons, including 3 women. According to Winthrop Difford, the group came "from all levels—doctors, chemists, prospectors, bums, etc."—and from a radius of about 150 miles. No text was used, but a bibliography was provided, as well as free company literature. Geology was a major topic, but guest lecturers also spoke on equipment, tests, mining, financing, and law. He has been urged to repeat the course and has inquiries about offering a correspondence course. One wonders whether the bums resolved to become prospectors or the prospectors decided to become bums. Or is there a difference?

Quite a number of people are given a monthly dose of geology in a pleasant and painless form through magazines of certain state conservation or wildlife agencies. In the Minnesota "Conservation Volunteer," going to about 10,000 persons, the state survey has published a series of short, popular articles on the geology of state parks. In the Monthly Bulletin of the Department of Internal Affairs, which circulates to a large number of laymen and amateurs, the Pennsylvania Survey regularly has two pages under the heading of The Penn Prospector. This column contains timely information on such items as new maps and reports, field conferences held in Pennsylvania, and current mineral-production figures and geologic notes.

For several years Charles Gwynne at Iowa State has been contributing a column on the geology of the state's parks to the "Iowa Conservationist." In the issue for March of this year Gwynne describes the rocks and glacial features of Oakland Mills State Park, and shows how the intersection of hard bedrock and the channel of the Skunk River explains the location of a power plant. Forty-four of these descriptions have appeared, and at a circulation of 51,000 this means that geology has entered Iowa homes nearly two and a quarter million times over the past few years. Among other rewards, Gwynne has

## E J C REPORT

The Engineers Joint Council has recently released a report entitled, "Professional Standards and Employment Conditions (for Engineers)." The report recognizes the problems as complex, with obligations and responsibilities resting on both employer and employee. Concerted efforts by all concerned are necessary if the problems are to be addressed successfully. The E J C report makes the following summary recommendations:

1. Management utilize the services of engineers more effectively and thereby afford them opportunity for advancement and economic improvement.
2. Management recognize its responsibility to make engineers feel that they are a part of management.
3. Management survey areas of communication, recognition, and salaries and, where found wanting, correct to conform with standards of professional practice.
4. The engineer take inventory of his services and his actions to make sure that he has a professional attitude toward his work.
5. Engineering societies establish and employ appropriate means to maintain high standards of ethical conduct for professional achievement.
6. Engineering societies encourage the professional development of their members and promote proper recognition of the profession.
7. Engineering educators emphasize the characteristics of the profession.

The problems of the engineering and geological professions are parallel in many respects, so that many may want to study the full text of this concise 14-page report available from the Engineers Joint Council, 29 W. 39th Street, New York 18, N. Y.

received a fan letter that begins, "No one knows how pleased I am that colleges in Iowa are at last teaching our youth facts and knowledge." How long has this been going on?

# AMERICAN GEOLOGICAL INSTITUTE

## 1956 ROSTER

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## AGI ROSTER, *continued*

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##### **Local Society Affiliation Study**

(Committee to be selected.)

## **Nuclear Congress Program**

In keeping with the procedures established by Dr. Paul F. Kerr's AGI committee for the First Nuclear Congress, invitations have been sent to all member societies to consider participation in the Second Nuclear Congress to be held in Philadelphia on March 10-15, 1957. The societies interested in taking part in the Congress have been asked to appoint a member to the AGI program committee which will coordinate the presentation of geological papers in the technical sessions.

In outlining topics for this interdisciplinary conference, interest has been expressed in the following: geologic aspects of waste disposal; origin of uranium and thorium, and the chemistry of deposition of their minerals; localization of radio-active deposits—provinces and distribution in rock types, relation to major earth units, mineral relations and paragenesis; geology of some thorium-producing areas (India, Idaho, etc.); summary of recent advances in knowledge of reserves, resources, production, and mineralogy.

Inquiries and suggestions may be addressed to Committee Chairman, W. R. Thurston, Division of Earth Sciences, 2101 Constitution Ave., Washington 25, D. C.



# LETTERS

DEAR EDITOR:

Despite delays in forwarding from Rome, my copies of the Geological Newsletter reach me in Israel where I am stationed as a United Nations Technical Expert. I read them with much interest and it gives me the feeling of being considered as a member of the American Scientists' family. On the other hand, the international circulation which is given to a magazine written principally for local consumption adds to the responsibility of the publishers who should never forget the need of fostering international understanding.

Enclosed herewith is a cheque to cover the cost of the XXth Congress Field Excursion Resumes and a contribution to the Newsletter.

Yours Sincerely,

G. DESSAU  
Haifa, Israel

## GEOLOGY IN THE PUBLIC EYE

DEAR DR. BATES:

This is to thank you on behalf of the Shale Shaker, the Oklahoma City Geological Society and Mr. Howard Brown of the Public Schools of Oklahoma City for the splendid mention in your column in the June issue of the A.G.I. Newsletter. That is recognition one could not afford to buy—but certainly justly deserved. Thanks also for the card calling attention to your forthcoming column—it was certainly very thoughtful.

Cordially yours,

MILDRED ARMOR FRIZZELL  
Editor, Shale Shaker

## LIVINGSTONE ON LICENSING . . .

McGraw-Hill has just published Professional Engineer's Examination, questions and answers, by W. S. LaLonde, Jr., 462 pp., 234 illus. (\$6.50). The ad we received says—"over 500 questions and complete answers to help engineers pass state license examinations." Geologists too?

So this is how licensing protects the public! Is the license a shingle or a shake?

Legally yours,

DR. LIVINGSTONE  
Professional Geologist

DEAR MR. STEPHENSON:

GEO TIMES is a worthy successor to the Geological Newsletter. As a matter of fact, it of course should not be called a successor at all, but rather a new stage in the new era of publication of the American Geological Institute. I find this publication in every way a pleasing one. This applies to the contents, the design and the art work—they all contribute to a harmonious total.

I also like your statement at the top of page 3, concerning the Institute, what it is and what it does. Your explanation of why the new magazine should make the change clear to everyone.

Among the things which catch my eye is of course the AGI "emblem" (Coordination-Cooperation-Service) which is used on the cover and on the title page. This item was designed in our Tulsa office by one of our draftsmen, based on ideas presented by a number of our geologists at a conference on this subject. It looks particularly well in the two-color pattern on the cover.

Best wishes for the success of GEO TIMES.

Very sincerely yours,

A. RODGER DENISON

DEAR SIR,

Enclosed is a contribution for the Newsletter which you have been sending to me since last October, and which I hope you will be able to send to me throughout this year.

Situated as I am, about 8,000 miles from the fountainhead of American geology and soil science, the sprinkling of editorials, featured and itemized announcements of happenings in the scientific world, plus the sage comments and hardbitten humor of Sandstone Sam converge to form a bright oasis in this saltwater desert out here.

I am sure that most of the other 14,499 readers who have not yet contributed toward continuation of this splendid service are about like I am, they have been intending to do so but just haven't gotten around to it. Let's keep plugging at them. I am sure that most of them will "kick in," especially if you should all happen to go on a vacation for a month (please don't!).

Sincerely,

CARL H. STENSLAND  
In the South Pacific

## the CONGRESS CORNER . .

In this column, which has appeared monthly since the first of the year, we have attempted to keep our readers posted on developments of the XXth International Geological Congress, Mexico City, Sept. 4-11. We are grateful to our Mexican friends for their assistance in making this service possible through the AGI Congress Liaison Committee. We hope that you have found the service helpful. Probably everybody but the writer has his necessary shots, travel permit and birth certificates—he has been too busy urging other people to do so.

For those who are attending the Congress many rare treats are in store. Not only are there many unusual opportunities for acquaintance and exchange of ideas with geoscientists of other countries, but there are many fine things about Mexico which we are certain to enjoy. We may look forward to enjoying the typical warm hospitality of Mexico and a relaxation from the fevered pitch of living north of the Rio Grande. We will indulge in the breath-taking scenery which may be found in many parts of mountainous Mexico. We will enjoy the cities with their delightful combination of the picturesque old and the ultramodern. We can expect to be fascinated by the archeologic history of Mexico and the colorful early history of the country.

The University of Mexico, oldest college in the Western Hemisphere, is some 80 years older than Harvard (1636). Against a background of tradition and antiquity, the University of Mexico has achieved a position of eminence and prestige among schools of higher learning, and the new campus is truly a national show-place.

An alternate route from Monterrey to Mexico is via Saltillo and San Luis Potosi. This route is partly good gravel road and less mountainous. In 1955 the main highway was washed out at Valles.

## JOURNALS FOR INDONESIA

From the University of Indonesia, Bandung, the American Geological Institute has had an urgent request for assistance in filling gaps that occur in their library of U. S. geological journals. Needed are:

American Journal of Science	1951-1953 incl.
Bulletin of the GSA	1951-1954 "
Economic Geology	1948-1954 "
Journal of Geology	1950-1954 "
AAPG Bulletin	1951-1954 "

Although funds are unavailable for purchase of these volumes, the department might offer in exchange Permian fossils from Timor and Pleistocene vertebrates, mainly teeth, from Java. Other publications are needed for their library. Persons who can help are urged to write Professor McDivitt, Professor of Economic Geology, Universitas Indonesia, Fakultas Ilmu Pasti Dan Alam, Bagian Geologi, Djalan Ganesa 10, Bandung.

In Indonesia, Dave Andrews of the USGS is aiding in the work of the Geological Survey, and the University of Kentucky is aiding the University through an I.C.A. contract.

The ladies attending the Congress in company of their geologist husbands may look forward to interesting and varied experiences. A pamphlet on "Shopping in Mexico," by Mrs. Grace Gillson, is available from AGI, 2101 Constitution Ave., N.W., Washington 25, D. C., at a cost of 25 cents to cover postage and handling. These will also be available at the AGI Exhibit at the Congress. Mrs. Gillson has much firsthand knowledge of Mexico and the ladies are sure to find her suggestions for shopping and things to do most interesting. *P.S. Evening dress not needed.*

## in September **GEO TIMES**

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#### **INTRODUCTION TO MICROFOSSILS**

by Daniel J. Jones, University of Utah. 406 pp., Harper & Bros., New York. 1956, \$6.50.

This profusely illustrated textbook, covering all of the groups of microfossils, should prove valuable as a text for college courses varying from a semester to a year, depending upon the time allotted to laboratory work and collateral reading based upon the extensive bibliographies following each chapter.

The first two chapters trace the history and development of micropaleontology together with a summary of methods of collection, preparation, and preservation of microfossils. The third chapter gives a synoptic classification of microfossils which is particularly useful as the author has followed the commendable modern trend of recognizing Haeckel's third kingdom of living organisms, the Protista, for some of those occurring in sediments. The next six chapters are devoted to a discussion, amazingly complete for a book of this size, of all types of microfossils, together with shaded line drawings of many important genera. Next is a chapter on paleoecology, one on the stratigraphy of microfossils, and one on applied micropaleontology, giving the methods used in many oil company micropaleontological laboratories.

The book closes with two very useful glossaries, one giving prefixes, suffixes, and common root words used in generic and trivial names; the other a general glossary of terms used in the descriptive taxonomy of microfossils. The first will be very useful in erecting new generic and trivial names, and if followed it may increase the number of descriptive names for new genera and new species and retard the flood of patronyms. A number of typographical errors appear, particularly in the spelling of the names of authors of species, but they are few indeed, and both author and publisher are to be congratulated in keeping the number so low in a book of this kind.

**NATIONAL WATER AND POWER POLICY, A Digest of the Water Policy Conference, Natural Resources Department, United States Chamber of Commerce, Washington 6, D. C., \$0.50.**

**MINERALS FOR ATOMIC ENERGY, A Guide to Exploration for Uranium, Thorium and Beryllium, by Robert D. Nininger, D. Van Nostrand Co. Inc., Princeton, N. J., 2nd Edition, June, 1956, 399 pp., \$8.00.**

This second edition by the Assistant Director for Exploration of the AEC promises to continue as the best seller in the exploration field. The first edition, which was reprinted six times, has been revised to incorporate developments of the past two years, during which time significant discoveries and changes in concepts were made. The opinion is offered that domestic reserves of uranium for a long-term atomic program remain to be found. The book is most complete—so complete, in fact, that this reviewer was surprised to find no mention of selenium; this semi-conductor essential to the electronic industry, occurs with some Western uranium ores in sufficient quantities to merit consideration as a recoverable by-product.

**ILLUSTRATIONS OF THE HUTTONIAN THEORY OF EARTH, by John Playfair, a facsimile reprint of the original edition of 1802 with an introduction by George W. White, University of Illinois Press, Urbana, 1956, 528 pp., \$4.50.**

John Playfair in this volume, published after the death of his friend, James Hutton, defended and elucidated the Huttonian Theory of the Earth which laid the foundation for much of modern geologic thinking. White in his introduction, points out that it was Lyell who first fully appreciated and correctly interpreted, about 1830, Hutton's theory, and relates other significant information concerning the Huttonian theory. The University of Illinois press is to be commended for reprinting this geologic classic by facsimile from a copy of the original in the Spindletop Engineering Library, Lamar State College of Technology, Beaumont, Texas.

**FOREST AND RANGE POLICY, It's Development in the United States, by S. T. Dana, McGraw-Hill Book Co., Inc., New York, 1956, 455 pp., \$6.50.**

A chronologic account of significant aspects in the development forest and range policy in the United States with an appendix dealing with those factors relating to mineral, soil, water and wildlife resources. For persons interested in the history of development of our present forest and range policy, this book will prove a worthwhile reference.

## NEW Ideas Products Services

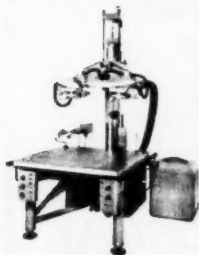
GEO-TIMES will welcome press releases and notices of new ideas, products and services from companies and individuals for possible use in this section.

**Hydraulic Mining** is being employed to reduce mining hazards by the American Gilsonite Co. in their Uinta Basin gilsonite mine. The ore is being pumped as a slurry of asphalt in water from the mine near Bonanza, Utah, through 71 miles of pipe line to a point west of Grand Junction. A plant will there convert the gilsonite into gasoline and a low ash coke. The company is owned jointly by the Barber Oil Co. and Standard of California.

**Neutron Generator** is being developed which will have laboratory and research applications as well as being adaptable to oil-well logging. The apparatus, being developed under contract with Halliburton Oil Well Cementing Co., will produce induced radiation which will aid in the detection of oil and gas. For further data write **W. A. Stenzel, Dept. G, Tracerlab, Inc., 130 High Street, Boston 10, Mass.**

**Water-coning** of oil wells has been the subject of research study by Alan S. Michaels in the MIT Soil Stabilization Laboratory. A detergent mixture that will make sand repel water and attract oil, thus destroying the capillary forces, appears to have some promise in curbing water-coning.

**Gamble Stereoplotter** is a new photogrammetric plotter which makes use of a projected pattern of dots to form a reference plane on a tracing table. By raising and lowering the multiplex projector system the stereo model rises or falls through this reference plane, thus obviating the need for the conventional "floating dot" mechanism. The mechanism is reported to afford increased speed



## ROCK CHIPS

by SANDSTONE SAM

*You can't stop certain people from thinking, but you can start others.*

\* \* \*

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\* \* \*

*"Geology has expanded greatly in the last fifty years, thanks to the combined efforts of the geophysicists, the geochemists and the astrophysicists,"—a quote from "Careers and Opportunities in Science," by Philip Pollack, E. P. Dutton & Co. 1954 . . . and they acknowledge cooperation of the AGI yet.*

\* \* \*

*The diabolical hierarchy of organization has reached into Antarctica, where mountains in Marie Byrd Land have been dubbed the Executive Committee Range . . . probably by a frustrated executive secretary.*

and accuracy. For information write **PSC Applied Research, Ltd., Dept. G, 1500 O'Connor Drive, Toronto, Canada.**

**Gemmar Mineral Research Laboratories** has been organized at Rella, Mo., to provide for retrographic, spectrographic, chemical, X-ray and radiometric analyses of rocks and minerals on a commercial basis. An exploration section will offer diamond-core drilling, geophysical and geochemical services. The organization will deal in geological and prospecting equipment and supplies.

**Mn-Bi Permanent Magnets** have been successfully developed in the laboratory by Westinghouse. Powerful powder-type permanent magnets of high purity manganese-bismuth are imbedded in a plastic matrix, oriented and may be molded into many shapes. The plastic binder makes these magnets non-conductors of electricity and their high coercive force makes them very resistant to demagnetization.

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### VACANCIES

**UNIVERSITY OF MISSISSIPPI**, University, Mississippi. Two openings for teaching geology, one primarily for mineralogist-petrographer, one for more general courses. Highest salary of \$5000/nine months requires Ph.D. Opportunity for additional salary conducting summer field camp. Write: Chairman of Geology Department.

**MARSHALL COLLEGE**, Huntington, West Virginia: Teaching position requiring graduate work beyond the master's degree. Experience desired, but is not a requirement. Salary ranging upward to \$4,400 with opportunity for summer work. Write: J. F. Bartlett, Dean, Marshall College.

**UNIVERSITY OF MICHIGAN** has two openings on its museum staff for vertebrate and invertebrate preparators. These are excellent positions for young men who wish to get into museum work of this kind. Applicants should be willing to spend summers in the field. Salaries commensurate with experience. Excellent vacation, sick leave and retirement programs. Write: University of Michigan, Personnel Office, Ann Arbor, Mich.

**MONTANA SCHOOL OF MINES**, Butte, Montana, has attractive opening for geologist in paleontology, stratigraphy, petroleum geology, physical geology, to replace faculty member on one-year leave of absence. May lead to excellent permanent connection in teaching or research, or could be filled for one year by advanced graduate student desiring teaching experience and/or thesis material in Montana. Write: Head, Department of Geology.

**MONTANA BUREAU OF MINES AND GEOLOGY**, Butte, Montana, needs economic geologist immediately to make investigations of Montana's mineral resources as part of long-range program evaluating State's mineral potentialities. Unusual opportunity for near Ph.D. or Ph.D. with experience in examining mineral deposits and background in mineral economics. Write: W. S. March, Jr., Associate Director.

**BOX 70**, Stratigrapher to do chiefly subsurface work, facies analysis, etc., for mining exploration company in Midwest. Good opportunity.

**MICHIGAN STATE UNIVERSITY**, East Lansing, Michigan, has an opening beginning September, 1956, for a young man wishing to develop geophysics and hydrology. Salary and rank dependent on qualifications. Write: B. T. Sardefur, Dept. of Geology.

**BUCKNELL UNIVERSITY**, Lewisburg, Pennsylvania. Geology-Geography major for fall semester 1956. Minimum, Master's degree; some experience, to teach mineralogy, structural geology and regional geography. Salary \$3800-\$4200 depending on qualifications. Please contact: Prof. Bernard O. Bogert, Chrm., Dept. of Geology & Geography.

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## POSITIONS WANTED

**BOX 230. GEOLOGIST**, Ph.D., 34. Five years experience in government survey and University instructing. Principal interests petrology, structural geology, economic geology and geophysics. Desires position with state survey, research or teaching.

**BOX 227. Instructor in Geology at State University**, M.S. Ph.D. in September, 1956. Age 29. Specialties: Biogeochemistry, Paleontology. Four years of industrial research experience. Desire research of teaching position in Paleontology-Stratigraphy.

**BOX 231. Economic Geologist**, 36, M.S. degree, wishes to associate with domestic or international consultant, investment or exploration group or represent U.S. mineral interests in Europe. 9 years of domestic and foreign exploration and evaluation experience in metallic and non-metallic minerals. Working knowledge of Spanish, German, French. Aerial photo interpretation and commercial pilot.

**BOX 232. Geologist**, Ph.D. (B.S. in Paleontology). Primary interests sedimentation, stratigraphy and marine geology. 6 years experience engineering geology, geophysics and industrial mineralogy. Desires research or teaching position.

**BOX 233. Mineralogist-Petrographer** desires position in teaching, research and/or administration at salary commensurate with 20 years of progressive experience in educational, governmental and industrial work. Age: 47 years young. Fellow: GSA, MSA. Member: AChemS, SEcG, etc.

**BOX 234. Geologist**, 41, married, M.A. Geology, 2 years graduate work toward Ph.D., minor Petroleum Engineering, 7 years teaching experience. Prepared to teach Paleontology, Stratigraphy, Petroleum Geology, Structural Geology, Sedimentation, Field Geology, Aerial Photography, History of Geology. 3 years field experience. Publications, references.

**GEORGE V. CHILINGAR**, 543 S. Wilton Pl., Los Angeles 5, California. B. E. and M.S. in Petroleum Engr., close to straight A average (magna cum laude). Ph.D. in Geology, University of Southern California. Perfect command of Russian language; also know 6 other foreign languages. 4 years teaching experience. 2 years USAF Petroleum and Chemicals Lab. (1st Lt.). Numerous publications. Prefer teaching or research job in Los Angeles area. Age 27.

**PILOT**, 30, married, desires position with oil company as executive pilot or with aerial survey company. Have 4,500 hours total time, CAA Commercial and Instrument license. 1st pilot in single, jet, and multi engine aircraft. Write 1721 Prince St., Tallahassee, Fla.

**BOX 235. Geologist**, MS, Canadian exploration and underground experience with some teaching. Desires industrial or teaching position in the Eastern United States.

**BOX 236. Geologist**, B.S.&P.G., 32, married, 6 yrs. with major oil company. Extensive experience in surface mapping, off-shore development, regional subsurface mapping. Also 4 yrs. college teaching, aerial photo interpretations, and party chief. Desires employment with small oil company or reliable independent.

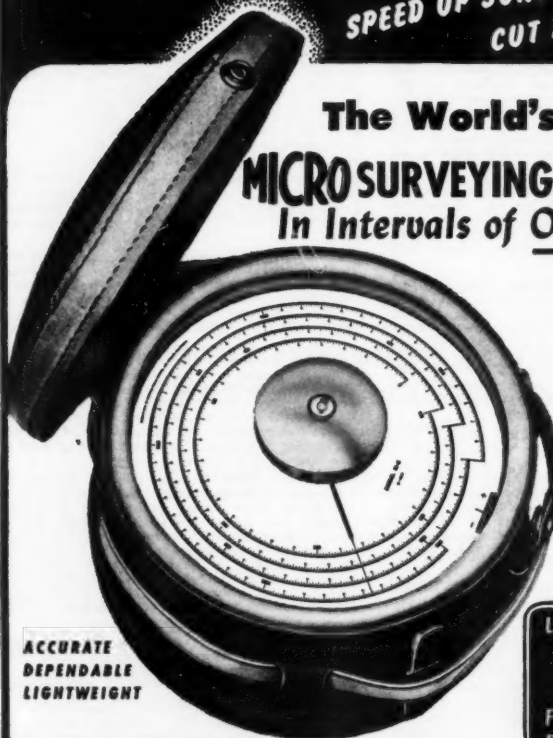
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# Calendar

Cooperation of Society Secretaries in supplying meeting notices for GeoTimes calendar is requested.

Sept. 4-11, 1956—20th INTERNATIONAL GEOL. CONGRESS, Mexico, Pre-Congress Excursions August 15-Sept. 2; Post-Congress Excursions Sept. 13-21. D.F. Contact: Congreso Geologica Internacional, Calle Balderas 36, Despacho 302A, Mexico, D.F.

Sept. 5-7, 1956—WYOMING GEOL. ASSOC., 11th Ann. Field Conf., Jackson Lake Lodge, Moran, Wyo. Field trips through Jackson Hole area. Write: K. W. Frielinghausen, Box 1571, Casper, Wyo.

Sept. 17-21, 1956—AMER. SOC. FOR TESTING MATERIALS, 2nd Pacific Area National Meeting & Apparatus Exhibit, Hotel Statler, Los Angeles, Calif.

Sept. 20-22, 1956—OKLA. CITY GEOLOGICAL SOC., Field Conference studying Paleozoic rocks of NW Anadarko Basin, Oklahoma Panhandle and Colorado Front Range, Central Colorado. Register with L. S. Beckmann, Champlin Refining Co., Box 1713, Oklahoma City, Okla.

Sept. 26-28, 1956—A.I.M.E., ROCKY MT. MINERALS CONF., Newhouse Hotel, Salt Lake City, Utah.

Sept. 27-30, 1956—7th ALASKAN SCIENCE CONFERENCE, spon. by Alaska Div. A.A.A.-S., Juneau, Alaska. Sections on Geol. & Geog. and Geophysics are included. Write airmail: C. H. Baltzo Fish & Wildlife Serv., Juneau, Alaska.

Sept. 30-Oct. 2, 1956—ACSM-ASP Fall convention and co-exhibit, Shirley-Savoy Hotel, Denver, Colo. Write: ACSM-ASP, Box 1407, Edgewater Br., Denver 14, Colo.

Oct. 1-4, 1956—AMER. MINING CONGRESS, Metal Mining & Ind. Mineral Conv. & Exposition. Shrine Exposition Hall, Los Angeles, Calif. Hotel Reservations from A.M.C. Housing Bur., L. A. Chamb. of Comm., 1151 S. Broadway, Los Angeles 15, Calif.

Oct. 2-5, 1956—NATIONAL WATER WELL ASSOCIATION, Ann. meeting and Exposition. New Franklin Co. Veteran's Memorial Auditorium, Columbus, Ohio.

Oct. 8-10, 1956—NATIONAL CLAY MINERALS CONFERENCE, Univ. of Illinois, Urbana, Ill.

Oct. 14-17, 1956—A.I.M.E., Petroleum Br. Biltmore Hotel, Los Angeles, Calif.

Oct. 25-26, 1956—A.I.M.E., Fuels Conference, Coal Div., Sheraton-Park Hotel, Washington, D. C.

Oct. 29-Nov. 1, 1956—SEGp, 26th Ann. mtg., Roosevelt Hotel, New Orleans.

Oct. 31-Nov. 2, 1956—GULF COAST ASSOCIATION OF GEOLOGICAL SOCIETIES, 6th Annual Convention, Plaza Hotel, San Antonio, Texas.

Oct. 31, Nov. 1-2 1956—GSA, MSA, PS, SVP, AGI Ann. Mtg., Minneapolis.

Nov. 8-9, 1956—A.A.P.G., S.E.G.P., & S.E.P.M., Pacific Section, Ambassador Hotel, Los Angeles, Calif.

Nov. 8-10, 1956—A.I.M.E., N.E. REGIONAL MEETING, Mining Branch, Hotel Hershey, Hershey, Pa.

1957-58 — INTERNATIONAL GEOPHYSICAL YR.

Feb. 24-28, 1957—A.I.M.E., Annual Meeting, Hotels Roosevelt and Jung, New Orleans, La.

Mar 10-16, 1957—ENGINEERS JOINT COUNCIL, 2nd Nuclear Engineering and Science Congress, Convention Hall, Philadelphia.

May 16-18, 1957—G.S.A., SOUTHEASTERN SECTION, Morgantown, W. Va.

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